

## SEQUENCE LISTING

&lt;110&gt; Bertin, John

&lt;120&gt; NOVEL MOLECULES OF THE CARD-RELATED PROTEIN FAMILY AND USES THEREOF

&lt;130&gt; 07334-076001

&lt;140&gt; 09/099,041

&lt;141&gt; 1998-06-17

&lt;150&gt; 09/019,942

&lt;151&gt; 1998-02-06

&lt;160&gt; 37

&lt;170&gt; FastSEQ for Windows Version 4.0

&lt;210&gt; 1

&lt;211&gt; 1931

&lt;212&gt; DNA

&lt;213&gt; Homo sapiens

&lt;220&gt;

&lt;221&gt; CDS

&lt;222&gt; (214) . . . (1833)

&lt;400&gt; 1

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gcacaccgg aaccggcctg agcgcccggg acc atg aac ggg gag gcc atc tgc	234
	Met Asn Gly Glu Ala Ile Cys
	1 5

agc gcc ctg ccc acc att ccc tac cac aaa ctc gcc gac ctg cgc tac	282
Ser Ala Leu Pro Thr Ile Pro Tyr His Lys Leu Ala Asp Leu Arg Tyr	
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ctg agc cgc ggc gcc tct ggc act gtg tcg tcc gcc cgc cac gca gac	330
Leu Ser Arg Gly Ala Ser Gly Thr Val Ser Ser Ala Arg His Ala Asp	
25 30 35	

tgg cgc gtc cag gtg gcc gtg aag cac ctg cac atc cac act ccg ctg	378
Trp Arg Val Gln Val Ala Val Lys His Leu His Ile His Thr Pro Leu	
40 45 50 55	

ctc gac agt gaa aga aag gat gtc tta aga gaa gct gaa att tta cac	426
Leu Asp Ser Glu Arg Lys Asp Val Leu Arg Glu Ala Glu Ile Leu His	
60 65 70	

aaa gct aga ttt agt tac att ctt cca att ttg gga att tgc aat gag	474
Lys Ala Arg Phe Ser Tyr Ile Leu Pro Ile Leu Gly Ile Cys Asn Glu	
75 80 85	

cct gaa ttt ttg gga ata gtt act gaa tac atg cca aat gga tca tta Pro Glu Phe Leu Gly Ile Val Thr Glu Tyr Met Pro Asn Gly Ser Leu 90 95 100	522
aat gaa ctc cta cat agg aaa act gaa tat cct gat gtt gct tgg cca Asn Glu Leu Leu His Arg Lys Thr Glu Tyr Pro Asp Val Ala Trp Pro 105 110 115	570
ttg aga ttt cgc atc ctg cat gaa att gcc ctt ggt gta aat tac ctg Leu Arg Phe Arg Ile Leu His Glu Ile Ala Leu Gly Val Asn Tyr Leu 120 125 130 135	618
cac aat atg act cct cct tta ctt cat cat gac ttg aag act cag aat His Asn Met Thr Pro Pro Leu Leu His His Asp Leu Lys Thr Gln Asn 140 145 150	666
atc tta ttg gac aat gaa ttt cat gtt aag att gca gat ttt ggt tta Ile Leu Leu Asp Asn Glu Phe His Val Lys Ile Ala Asp Phe Gly Leu 155 160 165	714
tca aag tgg cgc atg atg tcc ctc tca cag tca cga agt agc aaa tct Ser Lys Trp Arg Met Met Ser Leu Ser Gln Ser Arg Ser Ser Lys Ser 170 175 180	762
gca cca gaa gga ggg aca att atc tat atg cca cct gaa aac tat gaa Ala Pro Glu Gly Gly Thr Ile Ile Tyr Met Pro Pro Glu Asn Tyr Glu 185 190 195	810
cct gga caa aaa tca agg gcc agt atc aag cac gat ata tat agc tat Pro Gly Gln Lys Ser Arg Ala Ser Ile Lys His Asp Ile Tyr Ser Tyr 200 205 210 215	858
gca gtt atc aca tgg gaa gtg tta tcc aga aaa cag cct ttt gaa gat Ala Val Ile Thr Trp Glu Val Leu Ser Arg Lys Gln Pro Phe Glu Asp 220 225 230	906
gtc acc aat cct ttg cag ata atg tat agt gtg tca caa gga cat cga Val Thr Asn Pro Leu Gln Ile Met Tyr Ser Val Ser Gln Gly His Arg 235 240 245	954
cct gtt att aat gaa gaa agt ttg cca tat gat ata cct cac cga gca Pro Val Ile Asn Glu Glu Ser Leu Pro Tyr Asp Ile Pro His Arg Ala 250 255 260	1002
cgt atg atc tct cta ata gaa agt gga tgg gca caa aat cca gat gaa Arg Met Ile Ser Leu Ile Glu Ser Gly Trp Ala Gln Asn Pro Asp Glu 265 270 275	1050
aga cca tct ttc tta aaa tgt tta ata gaa ctt gaa cca gtt ttg aga Arg Pro Ser Phe Leu Lys Cys Leu Ile Glu Leu Glu Pro Val Leu Arg 280 285 290 295	1098
aca ttt gaa gag ata act ttt ctt gaa gct gtt att cag cta aag aaa Thr Phe Glu Glu Ile Thr Phe Leu Glu Ala Val Ile Gln Leu Lys Lys 300 305 310	1146
aca aag tta cag agt gtt tca agt gcc att cac cta tgt gac aag aag	1194

Thr Lys Leu Gln Ser Val Ser Ser Ala Ile His Leu Cys Asp Lys Lys				
315	320	325		
aaa atg gaa tta tct ctg aac ata cct gta aat cat ggt cca caa gag				1242
Lys Met Glu Leu Ser Leu Asn Ile Pro Val Asn His Gly Pro Gln Glu				
330	335	340		
gaa tca tgt gga tcc tct cag ctc cat gaa aat agt ggt tct cct gaa				1290
Glu Ser Cys Gly Ser Ser Gln Leu His Glu Asn Ser Gly Ser Pro Glu				
345	350	355		
act tca agg tcc ctg cca gct cct caa gac aat gat ttt tta tct aga				1338
Thr Ser Arg Ser Leu Pro Ala Pro Gln Asp Asn Asp Phe Leu Ser Arg				
360	365	370	375	
aaa gct caa gac tgt tat ttt atg aag ctg cat cac tgt cct gga aat				1386
Lys Ala Gln Asp Cys Tyr Phe Met Lys Leu His His Cys Pro Gly Asn				
380	385	390		
cac agt tgg gat agc acc att tct gga tct caa agg gct gca ttc tgt				1434
His Ser Trp Asp Ser Thr Ile Ser Gly Ser Gln Arg Ala Ala Phe Cys				
395	400	405		
gat cac aag acc att cca tgc tct tca gca ata ata aat cca ctc tca				1482
Asp His Lys Thr Ile Pro Cys Ser Ser Ala Ile Ile Asn Pro Leu Ser				
410	415	420		
act gca gga aac tca gaa cgt ctg cag cct ggt ata gcc cag cag tgg				1530
Thr Ala Gly Asn Ser Glu Arg Leu Gln Pro Gly Ile Ala Gln Gln Trp				
425	430	435		
atc cag agc aaa agg gaa gac att gtg aac caa atg aca gaa gcc tgc				1578
Ile Gln Ser Lys Arg Glu Asp Ile Val Asn Gln Met Thr Glu Ala Cys				
440	445	450	455	
ctt aac cag tog cta gat gcc ctt ctg tcc agg gac ttg atc atg aaa				1626
Leu Asn Gln Ser Leu Asp Ala Leu Leu Ser Arg Asp Leu Ile Met Lys				
460	465	470		
gag gac tat gaa ctt gtt agt acc aag cct aca agg acc tca aaa gtc				1674
Glu Asp Tyr Glu Leu Val Ser Thr Lys Pro Thr Arg Thr Ser Lys Val				
475	480	485		
aga caa tta cta gac act act gac atc caa gga gaa ttt gcc aaa				1722
Arg Gln Leu Leu Asp Thr Thr Asp Ile Gln Gly Glu Glu Phe Ala Lys				
490	495	500		
gtt ata gta caa aaa ttg aaa gat aac aaa caa atg ggt ctt cag cct				1770
Val Ile Val Gln Lys Leu Lys Asp Asn Lys Gln Met Gly Leu Gln Pro				
505	510	515		
tac ccg gaa ata ctt gtg gtt tct aga tca cca tct tta aat tta ctt				1818
Tyr Pro Glu Ile Leu Val Val Ser Arg Ser Pro Ser Leu Asn Leu Leu				
520	525	530	535	
caa aat aaa agc atg taagtgactg ttttcaaga agaaatgtgt ttcataaaag				1873
Gln Asn Lys Ser Met				

gatatttata aaaaaaaaaaaa aaaaaaaaaaaa aaaaaaaaaaaa aaaaaaaaaaaa aaaaaaaaaa 1931

<210> 2  
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<212> PRT  
<213> Homo sapiens

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1 5 10 15  
Lys Leu Ala Asp Leu Arg Tyr Leu Ser Arg Gly Ala Ser Gly Thr Val  
20 25 30  
Ser Ser Ala Arg His Ala Asp Trp Arg Val Gln Val Ala Val Lys His  
35 40 45  
Leu His Ile His Thr Pro Leu Leu Asp Ser Glu Arg Lys Asp Val Leu  
50 55 60  
Arg Glu Ala Glu Ile Leu His Lys Ala Arg Phe Ser Tyr Ile Leu Pro  
65 70 75 80  
Ile Leu Gly Ile Cys Asn Glu Pro Glu Phe Leu Gly Ile Val Thr Glu  
85 90 95  
Tyr Met Pro Asn Gly Ser Leu Asn Glu Leu Leu His Arg Lys Thr Glu  
100 105 110  
Tyr Pro Asp Val Ala Trp Pro Leu Arg Phe Arg Ile Leu His Glu Ile  
115 120 125  
Ala Leu Gly Val Asn Tyr Leu His Asn Met Thr Pro Pro Leu Leu His  
130 135 140  
His Asp Leu Lys Thr Gln Asn Ile Leu Leu Asp Asn Glu Phe His Val  
145 150 155 160  
Lys Ile Ala Asp Phe Gly Leu Ser Lys Trp Arg Met Met Ser Leu Ser  
165 170 175  
Gln Ser Arg Ser Ser Lys Ser Ala Pro Glu Gly Gly Thr Ile Ile Tyr  
180 185 190  
Met Pro Pro Glu Asn Tyr Glu Pro Gly Gln Lys Ser Arg Ala Ser Ile  
195 200 205  
Lys His Asp Ile Tyr Ser Tyr Ala Val Ile Thr Trp Glu Val Leu Ser  
210 215 220  
Arg Lys Gln Pro Phe Glu Asp Val Thr Asn Pro Leu Gln Ile Met Tyr  
225 230 235 240  
Ser Val Ser Gln Gly His Arg Pro Val Ile Asn Glu Glu Ser Leu Pro  
245 250 255  
Tyr Asp Ile Pro His Arg Ala Arg Met Ile Ser Leu Ile Glu Ser Gly  
260 265 270  
Trp Ala Gln Asn Pro Asp Glu Arg Pro Ser Phe Leu Lys Cys Leu Ile  
275 280 285  
Glu Leu Glu Pro Val Leu Arg Thr Phe Glu Glu Ile Thr Phe Leu Glu  
290 295 300  
Ala Val Ile Gln Leu Lys Lys Thr Lys Leu Gln Ser Val Ser Ser Ala  
305 310 315 320  
Ile His Leu Cys Asp Lys Lys Lys Met Glu Leu Ser Leu Asn Ile Pro  
325 330 335  
Val Asn His Gly Pro Gln Glu Glu Ser Cys Gly Ser Ser Gln Leu His  
340 345 350  
Glu Asn Ser Gly Ser Pro Glu Thr Ser Arg Ser Leu Pro Ala Pro Gln  
355 360 365  
Asp Asn Asp Phe Leu Ser Arg Lys Ala Gln Asp Cys Tyr Phe Met Lys

370	375	380
Leu His His Cys Pro Gly Asn His Ser Trp Asp	Ser Thr Ile Ser Gly	
385	390	395
Ser Gln Arg Ala Ala Phe Cys Asp His Lys	Thr Ile Pro Cys Ser Ser	400
405	410	415
Ala Ile Ile Asn Pro Leu Ser Thr Ala Gly Asn Ser Glu Arg	Leu Gln	
420	425	430
Pro Gly Ile Ala Gln Gln Trp Ile Gln Ser Lys Arg	Glu Asp Ile Val	
435	440	445
Asn Gln Met Thr Glu Ala Cys Leu Asn Gln Ser	Leu Asp Ala Leu Leu	
450	455	460
Ser Arg Asp Leu Ile Met Lys Glu Asp Tyr Glu	Leu Val Ser Thr Lys	
465	470	475
Pro Thr Arg Thr Ser Lys Val Arg Gln Leu	Leu Asp Thr Thr Asp Ile	480
485	490	495
Gln Gly Glu Glu Phe Ala Lys Val Ile Val Gln Lys	Leu Lys Asp Asn	
500	505	510
Lys Gln Met Gly Leu Gln Pro Tyr Pro Glu Ile	Leu Val Val Ser Arg	
515	520	525
Ser Pro Ser Leu Asn Leu Leu Gln Asn Lys Ser Met		
530	535	540

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 <213> Homo sapiens

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 cgcgtccagg tggccgtgaa gcacctgcac atccacactc cgctgctcga cagtgaaaga 180  
 aaggatgtct taagagaagc tgaaattttt cacaagcta gattttagttt cattcttcca 240  
 attttggaa tttgcaatga gcctgaattt ttggaaatag ttactgaata catgccaaat 300  
 ggatcattaa atgaactcct acataggaaa actgaatata ctgatgttgc ttggccattt 360  
 agatttcgca tcctgcatga aattgccctt ggtgtaaattt acctgcacaa tatgactcct 420  
 ccttacttc atcatgactt gaagactcag aatatcttat tggacaatga atttcatgtt 480  
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 caccgagcac gtatgatctc tctaataaaaaa agtggatggg cacaaaaatcc agatgaaaga 840  
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 actttcttg aagctgttat tcagctaaag aaaacaaagt tacagagtgt ttcaagtgcc 960  
 attcacctat gtgacaagaa gaaaatggaa ttatctctga acatacctgt aaatcatgtt 1020  
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 cagagaaaaa ggaaagacat tgtgaaccaa atgacagaag cctgccttaa ccagtcgcta 1380  
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 cctacaagga cctcaaaaatc cagacaatta ctagacacta ctgacatcca aggagaagaa 1500  
 tttgccaaag ttatagtaca aaaattgaaa gataacaaac aaatgggtct tcagccttac 1560  
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<212> PRT  
<213> Homo sapiens

<400> 4

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Lys	Leu	Ala	Asp	Leu	Arg	Tyr	Leu	Ser	Arg	Gly	Ala	Ser	Gly	Thr	Val
				20				25				30			
Ser	Ser	Ala	Arg	His	Ala	Asp	Trp	Arg	Val	Gln	Val	Ala	Val	Lys	His
				35				40				45			
Leu	His	Ile	His	Thr	Pro	Leu	Leu	Asp	Ser	Glu	Arg	Lys	Asp	Val	Leu
				50				55			60				
Arg	Glu	Ala	Glu	Ile	Leu	His	Lys	Ala	Arg	Phe	Ser	Tyr	Ile	Leu	Pro
	65			70				75				80			
Ile	Leu	Gly	Ile	Cys	Asn	Glu	Pro	Glu	Phe	Leu	Gly	Ile	Val	Thr	Glu
				85				90			--		95		
Tyr	Met	Pro	Asn	Gly	Ser	Leu	Asn	Glu	Leu	Leu	His	Arg	Lys	Thr	Glu
				100				105				110			
Tyr	Pro	Asp	Val	Ala	Trp	Pro	Leu	Arg	Phe	Arg	Ile	Leu	His	Glu	Ile
				115				120				125			
Ala	Leu	Gly	Val	Asn	Tyr	Leu	His	Asn	Met	Thr	Pro	Pro	Leu	Leu	His
	130				135				140						
His	Asp	Leu	Lys	Thr	Gln	Asn	Ile	Leu	Leu	Asp	Asn	Glu	Phe	His	Val
	145				150				155				160		
Lys	Ile	Ala	Asp	Phe	Gly	Leu	Ser	Lys	Trp	Arg	Met	Met	Ser	Leu	Ser
				165				170				175			
Gln	Ser	Arg	Ser	Ser	Lys	Ser	Ala	Pro	Glu	Gly	Gly	Thr	Ile	Ile	Tyr
				180				185				190			
Met	Pro	Pro	Glu	Asn	Tyr	Glu	Pro	Gly	Gln	Lys	Ser	Arg	Ala	Ser	Ile
				195				200				205			
Lys	His	Asp	Ile	Tyr	Ser	Tyr	Ala	Val	Ile	Thr	Trp	Glu	Val	Leu	Ser
	210				215				220						
Arg	Lys	Gln	Pro	Phe	Glu	Asp	Val	Thr	Asn	Pro	Leu	Gln	Ile	Met	Tyr
	225				230				235				240		
Ser	Val	Ser	Gln	Gly	His	Arg	Pro	Val	Ile	Asn	Glu	Glu	Ser	Leu	Pro
				245				250				255			
Tyr	Asp	Ile	Pro	His	Arg	Ala	Arg	Met	Ile	Ser	Leu	Ile	Glu	Ser	Gly
				260				265				270			
Trp	Ala	Gln	Asn	Pro	Asp	Glu	Arg	Pro	Ser	Phe	Leu	Lys	Cys	Leu	Ile
				275				280				285			
Glu	Leu	Glu	Pro	Val	Leu	Arg	Thr	Phe	Glu	Glu	Ile				
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<212> PRT  
<213> Homo sapiens

<400> 5

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1				5				10			15				
Val	Ser	Ser	Ala	Ile	His	Leu	Cys	Asp	Lys	Lys	Lys	Met	Glu	Leu	Ser
				20				25				30			
Leu	Asn	Ile	Pro	Val	Asn	His	Gly	Pro	Gln	Glu	Glu	Ser	Cys	Gly	Ser
				35				40				45			
Ser	Gln	Leu	His	Glu	Asn	Ser	Gly	Ser	Pro	Glu	Thr	Ser	Arg	Ser	Leu

50	55	60
Pro Ala Pro Gln Asp Asn Asp Phe Leu Ser Arg Lys Ala Gln Asp Cys		
65	70	75
Tyr Phe Met Lys Leu His His Cys Pro Gly Asn His Ser Trp Asp Ser		80
85	90	95
Thr Ile Ser Gly Ser Gln Arg Ala Ala Phe Cys Asp His Lys Thr Ile		
100	105	110
Pro Cys Ser Ser Ala Ile Ile Asn Pro Leu Ser Thr Ala Gly Asn Ser		
115	120	125
Glu Arg Leu		
130		

<210> 6  
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<212> PRT  
<213> Homo sapiens

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Val Asn Gln Met Thr Glu Ala Cys Leu Asn Gln Ser Leu Asp Ala Leu		15
20	25	30
Leu Ser Arg Asp Leu Ile Met Lys Glu Asp Tyr Glu Leu Val Ser Thr		
35	40	45
Lys Pro Thr Arg Thr Ser Lys Val Arg Gln Leu Leu Asp Thr Thr Asp		
50	55	60
Ile Gln Gly Glu Glu Phe Ala Lys Val Ile Val Gln Lys Leu Lys Asp		
65	70	75
Asn Lys Gln Met Gly Leu Gln Pro Tyr Pro Glu Ile Leu Val Val Ser		80
85	90	95
Arg Ser Pro Ser Leu Asn Leu Leu Gln Asn Lys Ser Met		
100	105	

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<220>  
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<222> (245)...(3103)

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aagggrctgc gcagagtagc aggggcctg gagggcgccg cctgaatctt gattccctt		180
ctgctgagag gacacacgca gctgaagatg aatttggaa aagttagccgc ttgctacttt		240
aact atg gaa gag cag ggc cac agt gag atg gaa ata atc cca tca gag		289
Met Glu Glu Gln Gly His Ser Glu Met Glu Ile Ile Pro Ser Glu		
1	5	10
		15

tct cac ccc cac att caa tta ctg aaa agc aat cg gaa ctt ctg gtc		337
Ser His Pro His Ile Gln Leu Leu Lys Ser Asn Arg Glu Leu Leu Val		
20	25	30

act cac atc cgc aat act cag tgt ctg gtg gac aac ttg ctg aag aat		385
Thr His Ile Arg Asn Thr Gln Cys Leu Val Asp Asn Leu Leu Lys Asn		

35	40	45	
gac tac ttc tcg gcc gaa gat gcg gag att gtg tgt gcc tgc ccc acc Asp Tyr Phe Ser Ala Glu Asp Ala Glu Ile Val Cys Ala Cys Pro Thr			433
50	55	60	
cag cct gac aag gtc cgc aaa att ctg gac ctg gta cag agc aag ggc Gln Pro Asp Lys Val Arg Lys Ile Leu Asp Leu Val Gln Ser Lys Gly			481
65	70	75	
gag gag gtg tcc gag ttc ctc tac ttg ctc cag caa ctc gca gat Glu Glu Val Ser Glu Phe Leu Tyr Leu Leu Gln Gln Leu Ala Asp			529
80	85	90	95
gcc tac gtg gac ctc agg cct tgg ctg ctg gag atc ggc ttc tcc cct Ala Tyr Val Asp Leu Arg Pro Trp Leu Leu Glu Ile Gly Phe Ser Pro			577
100	105		110
tcc ctg ctc act cag agc aaa gtc gtg gtc aac act gac cca gtg agc Ser Leu Leu Thr Gln Ser Lys Val Val Asn Thr Asp Pro Val Ser			625
115	120	125	
agg tat acc cag cag ctg cga cac cat ctg ggc cgt gac tcc aag ttc Arg Tyr Thr Gln Gln Leu Arg His His Leu Gly Arg Asp Ser Lys Phe			673
130	135	140	
gtg ctg tgc tat gcc cag aag gag ctg ctg ctg gag gag atc tac Val Leu Cys Tyr Ala Gln Lys Glu Glu Leu Leu Glu Glu Ile Tyr			721
145	150	155	
atg gac acc atc atg gag ctg gtt ggc ttc agc aat gag agc ctg ggc Met Asp Thr Ile Met Glu Leu Val Gly Phe Ser Asn Glu Ser Leu Gly			769
160	165	170	175
agc ctg aac agc ctg gcc tgc ctc ctg gac cac acc acc ggc atc ctc Ser Leu Asn Ser Leu Ala Cys Leu Leu Asp His Thr Thr Gly Ile Leu			817
180	185	190	
aat gag cag ggt gag acc atc ttc atc ctg ggt gat gct ggg gtg ggc Asn Glu Gln Gly Glu Thr Ile Phe Ile Leu Gly Asp Ala Gly Val Gly			865
195	200	205	
aag tcc atg ctg cta cag cgg ctg cag agc ctc tgg gcc acg ggc cgg Lys Ser Met Leu Leu Gln Arg Leu Gln Ser Leu Trp Ala Thr Gly Arg			913
210	215	220	
cta gac gca ggg gtc aaa ttc ttc ttc cac ttt cgc tgc cgc atg ttc Leu Asp Ala Gly Val Lys Phe Phe Phe His Phe Arg Cys Arg Met Phe			961
225	230	235	
agc tgc ttc aag gaa agt gac agg ctg tgt ctg cag gac ctg ctc ttc Ser Cys Phe Lys Glu Ser Asp Arg Leu Cys Leu Gln Asp Leu Leu Phe			1009
240	245	250	255
aag cac tac tgc tac cca gag cgg gac ccc gag gag gtg ttt gcc ttc Lys His Tyr Cys Tyr Pro Glu Arg Asp Pro Glu Glu Val Phe Ala Phe			1057
260	265	270	

ctg ctg cgc ttc ccc cac gtg gcc ctc ttc acc ttc gat ggc ctg gac Leu Leu Arg Phe Pro His Val Ala Leu Phe Thr Phe Asp Gly Leu Asp 275 280 285	1105
gag ctg cac tcg gac ttg gac ctg agc cgc gtg cct gac agc tcc tgc Glu Leu His Ser Asp Leu Asp Leu Ser Arg Val Pro Asp Ser Ser Cys 290 295 300	1153
ccc tgg gag cct gcc cac ccc ctg gtc ttg ctg gcc aac ctg ctc agt Pro Trp Glu Pro Ala His Pro Leu Val Leu Leu Ala Asn Leu Leu Ser 305 310 315	1201
ggg aag ctg ctc aag ggg gct agc aag ctg ctc aca gcc cgc aca ggc Gly Lys Leu Leu Lys Gly Ala Ser Lys Leu Leu Thr Ala Arg Thr Gly 320 325 330 335	1249
atc gag gtc ccg cgc cag ttc ctg cggt aag aag gtg ctt ctc cggt ggc Ile Glu Val Pro Arg Gln Phe Leu Arg Lys Lys Val Leu Leu Arg Gly 340 345 350	1297
tcc tcc ccc agc cac ctg cgc gcc tat gcc agg agg atg ttc ccc gag Phe Ser Pro Ser His Leu Arg Ala Tyr Ala Arg Arg Met Phe Pro Glu 355 360 365	1345
cgg gcc ctg cag gac cgc ctg ctg agc cag ctg gag gcc aac ccc aac Arg Ala Leu Gln Asp Arg Leu Leu Ser Gln Leu Glu Ala Asn Pro Asn 370 375 380	1393
ctc tgc agc ctg tgc tct gtg ccc ctc ttc tgc tgg atc atc ttc cggt Leu Cys Ser Leu Cys Ser Val Pro Leu Phe Cys Trp Ile Ile Phe Arg 385 390 395	1441
tgc ttc cag cac ttc cgt gct gcc ttt gaa ggc tca cca cag ctg ccc Cys Phe Gln His Phe Arg Ala Ala Phe Glu Gly Ser Pro Gln Leu Pro 400 405 410 415	1489
gac tgc acg atg acc ctg aca gat gtc ttc ctc ctg gtc act gag gtc Asp Cys Thr Met Thr Leu Thr Asp Val Phe Leu Leu Val Thr Glu Val 420 425 430	1537
cat ctg aac agg atg cag ccc agc agc ctg gtg cag cggt aac aca cgc His Leu Asn Arg Met Gln Pro Ser Ser Leu Val Gln Arg Asn Thr Arg 435 440 445	1585
agc cca gtg gag acc ctc cac gcc ggc cggt gac act ctg tgc tcg ctg Ser Pro Val Glu Thr Leu His Ala Gly Arg Asp Thr Leu Cys Ser Leu 450 455 460	1633
ggg cag gtg gcc cac cgg ggc atg gag aag agc ctc ttt gtc ttc acc Gly Gln Val Ala His Arg Gly Met Glu Lys Ser Leu Phe Val Phe Thr 465 470 475	1681
cag gag gag gtg cag gcc tcc ggg ctg cag gag aga gac atg cag ctg Gln Glu Glu Val Gln Ala Ser Gly Leu Gln Glu Arg Asp Met Gln Leu 480 485 490 495	1729

ggc ttc ctg cgg gct ttg ccg gag ctg ggc ccc ggg ggt gac cag cag Gly Phe Leu Arg Ala Leu Pro Glu Leu Gly Pro Gly Gly Asp Gln Gln 500 505 510	1777
tcc tat gag ttt ttc cac ctc acc ctc cag gcc ttc ttt aca gcc ttc Ser Tyr Glu Phe Phe His Leu Thr Leu Gln Ala Phe Phe Thr Ala Phe 515 520 525	1825
ttc ctc gtg ctg gac gac agg gtg ggc act cag gag ctg ctc agg ttc Phe Leu Val Leu Asp Asp Arg Val Gly Thr Gln Glu Leu Leu Arg Phe 530 535 540	1873
ttc cag gag tgg atg ccc cct gcg ggg gca gcg acc acg tcc tgc tat Phe Gln Glu Trp Met Pro Pro Ala Gly Ala Ala Thr Thr Ser Cys Tyr 545 550 555	1921
cct ccc ttc ctc ccg ttc cag tgc ctg cag ggc agt ggt ccg gcg cgg Pro Pro Phe Leu Pro Phe Gln Cys Leu Gln Gly Ser Gly Pro Ala Arg 560 565 570 575	1969
gaa gac ctc ttc aag aac aag gat cac ttc cag ttc acc aac ctc ttc Glu Asp Leu Phe Lys Asn Lys Asp His Phe Gln Phe Thr Asn Leu Phe 580 585 590	2017
ctg tgc ggg ctg ttg tcc aaa gcc aaa cag aaa ctc ctg cgg cat ctg Leu Cys Gly Leu Leu Ser Lys Ala Lys Gln Lys Leu Leu Arg His Leu 595 600 605	2065
gtg ccc gcg gca gcc ctg agg aga aag cgc aag gcc ctg tgg gca cac Val Pro Ala Ala Ala Leu Arg Arg Lys Arg Lys Ala Leu Trp Ala His 610 615 620	2113
ctg ttt tcc agc ctg cgg ggc tac ctg aag agc ctg ccc cgc gtt cag Leu Phe Ser Ser Leu Arg Gly Tyr Leu Lys Ser Leu Pro Arg Val Gln 625 630 635	2161
gtc gaa agc ttc aac cag gtg cag gcc atg ccc acg ttc atc tgg atg Val Glu Ser Phe Asn Gln Val Gln Ala Met Pro Thr Phe Ile Trp Met 640 645 650 655	2209
ctg cgc tgc atc tac gag aca cag agc cag aag gtg ggg cag ctg gcg Leu Arg Cys Ile Tyr Glu Thr Gln Ser Gln Lys Val Gly Gln Leu Ala 660 665 670	2257
gcc agg ggc atc tgc gcc aac tac ctc aag ctg acc tac tgc aac gcc Ala Arg Gly Ile Cys Ala Asn Tyr Leu Lys Leu Thr Tyr Cys Asn Ala 675 680 685	2305
tgc tcg gcc gac tgc agc gcc ctc tcc ttc gtc ctg cat cac ttc ccc Cys Ser Ala Asp Cys Ser Ala Leu Ser Phe Val Leu His His Phe Pro 690 695 700	2353
aag cgg ctg gcc cta gac cta gac aac aac aat ctc aac gac tac ggc Lys Arg Leu Ala Leu Asp Leu Asp Asn Asn Leu Asn Asp Tyr Gly 705 710 715	2401
gtg cgg gag ctg cag ccc tgc ttc agc cgc ctc act gtt ctc aga ctc	2449

Val Arg Glu Leu Gln Pro Cys Phe Ser Arg Leu Thr Val Leu Arg Leu			
720	725	730	735
agc gta aac cag atc act gac ggt ggg gta aag gtg cta agc gaa gag			2497
Ser Val Asn Gln Ile Thr Asp Gly Gly Val Lys Val Leu Ser Glu Glu			
740	745	750	
ctg acc aaa tac aaa att gtg acc tat ttg ggt tta tac aac aac cag			2545
Leu Thr Lys Tyr Lys Ile Val Thr Tyr Leu Gly Leu Tyr Asn Asn Gln			
755	760	765	
atc acc gat gtc gga gcc agg tac gtc acc aaa atc ctg gat gaa tgc			2593
Ile Thr Asp Val Gly Ala Arg Tyr Val Thr Lys Ile Leu Asp Glu Cys			
770	775	780	
aaa ggc ctc acg cat ctt aaa ctg gga aaa aac aaa ata aca agt gaa			2641
Lys Gly Leu Thr His Leu Lys Leu Gly Lys Asn Lys Ile Thr Ser Glu			
785	790	795	
gga ggg aag tat ctc gcc ctg gct gtg aag aac agc aaa tca atc tct			2689
Gly Gly Lys Tyr Leu Ala Leu Ala Val Lys Asn Ser Lys Ser Ile Ser			
800	805	810	815
gag gtt ggg atg tgg ggc aat caa gtt ggg gat gaa gga gca aaa gcc			2737
Glu Val Gly Met Trp Gly Asn Gln Val Gly Asp Glu Gly Ala Lys Ala			
820	825	830	
tcc gca gag gct ctg cgg aac cac ccc agc ttg acc acc ctg agt ctt			2785
Phe Ala Glu Ala Leu Arg Asn His Pro Ser Leu Thr Thr Leu Ser Leu			
835	840	845	
gcg tcc aac ggc atc tcc aca gaa gga gga aag agc ctt gcg agg gcc			2833
Ala Ser Asn Gly Ile Ser Thr Glu Gly Lys Ser Leu Ala Arg Ala			
850	855	860	
ctg cag cag aac acg tct cta gaa ata ctg tgg ctg acc caa aat gaa			2881
Leu Gln Gln Asn Thr Ser Leu Glu Ile Leu Trp Leu Thr Gln Asn Glu			
865	870	875	
ctc aac gat gaa gtg gca gag agt ttg gca gaa atg ttg aaa gtc aac			2929
Leu Asn Asp Glu Val Ala Glu Ser Leu Ala Glu Met Leu Lys Val Asn			
880	885	890	895
cag acg tta aag cat tta tgg ctt atc cag aat cag atc aca gct aag			2977
Gln Thr Leu Lys His Leu Trp Leu Ile Gln Asn Gln Ile Thr Ala Lys			
900	905	910	
ggg act gcc cag ctg gca gat gcg tta cag agc aac act ggc ata aca			3025
Gly Thr Ala Gln Leu Ala Asp Ala Leu Gln Ser Asn Thr Gly Ile Thr			
915	920	925	
gag att tgc cta aat gga aac ctg ata aaa cca gag gag gcc aaa gtc			3073
Glu Ile Cys Leu Asn Gly Asn Leu Ile Lys Pro Glu Glu Ala Lys Val			
930	935	940	
tat gaa gat gag aag cgg att atc tgt ttc tgagaggatg ctttcctgtt			3123
Tyr Glu Asp Glu Lys Arg Ile Ile Cys Phe			

945

950

catggggttt ttgccctgga gcctcagcag caaatgccac tctggcagt ctttgtgtc	3183
agtgtcttaa aggggcctgc gcaggcgaa ctatcaggag tccactgcct ycatgatgca	3243
agccagcttc ctgtgcagaa ggtctggtcg gcaaactccc taagtaccg ctacaattct	3303
gcagaaaaag aatgtgtctt gcgagctgtt gtagttacag taaatacact gtgaagagaa	3363
aaaaaaaaacg gacgcgtgg	3382

&lt;210&gt; 8

&lt;211&gt; 953

&lt;212&gt; PRT

&lt;213&gt; Homo sapiens

&lt;400&gt; 8

Met Glu Glu Gln Gly His Ser Glu Met Glu Ile Ile Pro Ser Glu Ser	
1 . . 5 10 15	
His Pro His Ile Gln Leu Leu Lys Ser Asn Arg Glu Leu Leu Val Thr	
20 25 30	
His Ile Arg Asn Thr Gln Cys Leu Val Asp Asn Leu Leu Lys Asn Asp	
35 40 45	
Tyr Phe Ser Ala Glu Asp Ala Glu Ile Val Cys Ala Cys Pro Thr Gln	
50 55 60	
Pro Asp Lys Val Arg Lys Ile Leu Asp Leu Val Gln Ser Lys Gly Glu	
65 70 75 80	
Glu Val Ser Glu Phe Phe Leu Tyr Leu Leu Gln Gln Leu Ala Asp Ala	
85 90 95	
Tyr Val Asp Leu Arg Pro Trp Leu Leu Glu Ile Gly Phe Ser Pro Ser	
100 105 110	
Leu Leu Thr Gln Ser Lys Val Val Val Asn Thr Asp Pro Val Ser Arg	
115 120 125	
Tyr Thr Gln Gln Leu Arg His His Leu Gly Arg Asp Ser Lys Phe Val	
130 135 140	
Leu Cys Tyr Ala Gln Lys Glu Glu Leu Leu Leu Glu Glu Ile Tyr Met	
145 150 155 160	
Asp Thr Ile Met Glu Leu Val Gly Phe Ser Asn Glu Ser Leu Gly Ser	
165 170 175	
Leu Asn Ser Leu Ala Cys Leu Leu Asp His Thr Thr Gly Ile Leu Asn	
180 185 190	
Glu Gln Gly Glu Thr Ile Phe Ile Leu Gly Asp Ala Gly Val Gly Lys	
195 200 205	
Ser Met Leu Leu Gln Arg Leu Gln Ser Leu Trp Ala Thr Gly Arg Leu	
210 215 220	
Asp Ala Gly Val Lys Phe Phe His Phe Arg Cys Arg Met Phe Ser	
225 230 235 240	
Cys Phe Lys Glu Ser Asp Arg Leu Cys Leu Gln Asp Leu Leu Phe Lys	
245 250 255	
His Tyr Cys Tyr Pro Glu Arg Asp Pro Glu Glu Val Phe Ala Phe Leu	
260 265 270	
Leu Arg Phe Pro His Val Ala Leu Phe Thr Phe Asp Gly Leu Asp Glu	
275 280 285	
Leu His Ser Asp Leu Asp Leu Ser Arg Val Pro Asp Ser Ser Cys Pro	
290 295 300	
Trp Glu Pro Ala His Pro Leu Val Leu Leu Ala Asn Leu Leu Ser Gly	
305 310 315 320	
Lys Leu Leu Lys Gly Ala Ser Lys Leu Leu Thr Ala Arg Thr Gly Ile	
325 330 335	
Glu Val Pro Arg Gln Phe Leu Arg Lys Lys Val Leu Leu Arg Gly Phe	

340	345	350
Ser Pro Ser His Leu Arg Ala Tyr Ala Arg Arg Met Phe Pro Glu Arg		
355	360	365
Ala Leu Gln Asp Arg Leu Leu Ser Gln Leu Glu Ala Asn Pro Asn Leu		
370	375	380
Cys Ser Leu Cys Ser Val Pro Leu Phe Cys Trp Ile Ile Phe Arg Cys		
385	390	395
Phe Gln His Phe Arg Ala Ala Phe Glu Gly Ser Pro Gln Leu Pro Asp		400
405	410	415
Cys Thr Met Thr Leu Thr Asp Val Phe Leu Leu Val Thr Glu Val His		
420	425	430
Leu Asn Arg Met Gln Pro Ser Ser Leu Val Gln Arg Asn Thr Arg Ser		
435	440	445
Pro Val Glu Thr Leu His Ala Gly Arg Asp Thr Leu Cys Ser Leu Gly		
450	455	460
Gln Val Ala His Arg Gly Met Glu Lys Ser Leu Phe Val Phe Thr Gln		
465	470	475
Glu Glu Val Gln Ala Ser Gly Leu Gln Glu Arg Asp Met Gln Leu Gly		480
485	490	495
Phe Leu Arg Ala Leu Pro Glu Leu Gly Pro Gly Gly Asp Gln Gln Ser		
500	505	510
Tyr Glu Phe Phe His Leu Thr Leu Gln Ala Phe Phe Thr Ala Phe Phe		
515	520	525
Leu Val Leu Asp Asp Arg Val Gly Thr Gln Glu Leu Leu Arg Phe Phe		
530	535	540
Gln Glu Trp Met Pro Pro Ala Gly Ala Ala Thr Thr Ser Cys Tyr Pro		
545	550	555
Pro Phe Leu Pro Phe Gln Cys Leu Gln Gly Ser Gly Pro Ala Arg Glu		560
565	570	575
Asp Leu Phe Lys Asn Lys Asp His Phe Gln Phe Thr Asn Leu Phe Leu		
580	585	590
Cys Gly Leu Leu Ser Lys Ala Lys Gln Lys Leu Leu Arg His Leu Val		
595	600	605
Pro Ala Ala Ala Leu Arg Arg Lys Arg Lys Ala Leu Trp Ala His Leu		
610	615	620
Phe Ser Ser Leu Arg Gly Tyr Leu Lys Ser Leu Pro Arg Val Gln Val		
625	630	635
Glu Ser Phe Asn Gln Val Gln Ala Met Pro Thr Phe Ile Trp Met Leu		640
645	650	655
Arg Cys Ile Tyr Glu Thr Gln Ser Gln Lys Val Gly Gln Leu Ala Ala		
660	665	670
Arg Gly Ile Cys Ala Asn Tyr Leu Lys Leu Thr Tyr Cys Asn Ala Cys		
675	680	685
Ser Ala Asp Cys Ser Ala Leu Ser Phe Val Leu His His Phe Pro Lys		
690	695	700
Arg Leu Ala Leu Asp Leu Asp Asn Asn Leu Asn Asp Tyr Gly Val		
705	710	715
Arg Glu Leu Gln Pro Cys Phe Ser Arg Leu Thr Val Leu Arg Leu Ser		720
725	730	735
Val Asn Gln Ile Thr Asp Gly Gly Val Lys Val Leu Ser Glu Glu Leu		
740	745	750
Thr Lys Tyr Lys Ile Val Thr Tyr Leu Gly Leu Tyr Asn Asn Gln Ile		
755	760	765
Thr Asp Val Gly Ala Arg Tyr Val Thr Lys Ile Leu Asp Glu Cys Lys		
770	775	780
Gly Leu Thr His Leu Lys Leu Gly Lys Asn Lys Ile Thr Ser Glu Gly		
785	790	795
		800

Gly Lys Tyr Leu Ala Leu Ala Val Lys Asn Ser Lys Ser Ile Ser Glu  
       805                    810                    815  
 Val Gly Met Trp Gly Asn Gln Val Gly Asp Glu Gly Ala Lys Ala Phe  
       820                    825                    830  
 Ala Glu Ala Leu Arg Asn His Pro Ser Leu Thr Thr Leu Ser Leu Ala  
       835                    840                    845  
 Ser Asn Gly Ile Ser Thr Glu Gly Gly Lys Ser Leu Ala Arg Ala Leu  
       850                    855                    860  
 Gln Gln Asn Thr Ser Leu Glu Ile Leu Trp Leu Thr Gln Asn Glu Leu  
       865                    870                    875                    880  
 Asn Asp Glu Val Ala Glu Ser Leu Ala Glu Met Leu Lys Val Asn Gln  
       885                    890                    895  
 Thr Leu Lys His Leu Trp Leu Ile Gln Asn Gln Ile Thr Ala Lys Gly  
       900                    905                    910  
 Thr Ala Gln Leu Ala Asp Ala Leu Gln Ser Asn Thr Gly Ile Thr Glu  
       915                    920                    925  
 Ile Cys Leu Asn Gly Asn Leu Ile Lys Pro Glu Glu Ala Lys Val Tyr  
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<210> 9  
 <211> 2859  
 <212> DNA  
 <213> Homo sapiens

<400> 9

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gtggacaact	tgctgaagaa	tgactacttc	tcggccgaag	atgcggagat	tgtgtgtgcc	180
tgccccaccc	agcctgacaa	ggtccgcaaa	attctggacc	tggtagagag	caagggcgag	240
gaggtgtccg	agttcttcct	ctacttgctc	cagcaactcg	cagatgccta	cgtggacactc	300
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&lt;210&gt; 10

&lt;211&gt; 100

&lt;212&gt; PRT

&lt;213&gt; Homo sapiens

&lt;400&gt; 10

Glu	Ser	His	Pro	His	Ile	Gln	Leu	Leu	Lys	Ser	Asn	Arg	Glu	Leu	Leu
1					5				10				15		
Val	Thr	His	Ile	Arg	Asn	Thr	Gln	Cys	Leu	Val	Asp	Asn	Leu	Leu	Lys
						20			25				30		
Asn	Asp	Tyr	Phe	Ser	Ala	Glu	Asp	Ala	Glu	Ile	Val	Cys	Ala	Cys	Pro
						35			40			45			
Thr	Gln	Pro	Asp	Lys	Val	Arg	Lys	Ile	Leu	Asp	Leu	Val	Gln	Ser	Lys
						50			55			60			
Gly	Glu	Glu	Val	Ser	Glu	Phe	Phe	Leu	Tyr	Leu	Leu	Gln	Gln	Leu	Ala
						65			70			75			80
Asp	Ala	Tyr	Val	Asp	Leu	Arg	Pro	Trp	Leu	Leu	Glu	Ile	Gly	Phe	Ser
						85					90				95
Pro	Ser	Leu	Leu												
															100

&lt;210&gt; 11

&lt;211&gt; 200

&lt;212&gt; PRT

&lt;213&gt; Homo sapiens

&lt;400&gt; 11

Ile	Phe	Ile	Leu	Gly	Asp	Ala	Gly	Val	Gly	Lys	Ser	Met	Leu	Leu	Gln
1								5			10			15	
Arg	Leu	Gln	Ser	Leu	Trp	Ala	Thr	Gly	Arg	Leu	Asp	Ala	Gly	Val	Lys
							20		25			30			
Phe	Phe	His	Phe	Arg	Cys	Arg	Met	Phe	Ser	Cys	Phe	Lys	Glu	Ser	
							35		40			45			
Asp	Arg	Leu	Cys	Leu	Gln	Asp	Leu	Leu	Phe	Lys	His	Tyr	Cys	Tyr	Pro
							50		55			60			
Glu	Arg	Asp	Pro	Glu	Glu	Val	Phe	Ala	Phe	Leu	Leu	Arg	Phe	Pro	His
						65		70			75				80
Val	Ala	Leu	Phe	Thr	Phe	Asp	Gly	Leu	Asp	Glu	Leu	His	Ser	Asp	Leu

85	90	95
Asp Leu Ser Arg Val Pro Asp Ser Ser Cys Pro Trp Glu Pro Ala His		
100	105	110
Pro Leu Val Leu Leu Ala Asn Leu Leu Ser Gly Lys Leu Leu Lys Gly		
115	120	125
Ala Ser Lys Leu Leu Thr Ala Arg Thr Gly Ile Glu Val Pro Arg Gln		
130	135	140
Phe Leu Arg Lys Lys Val Leu Leu Arg Gly Phe Ser Pro Ser His Leu		
145	150	155
Arg Ala Tyr Ala Arg Arg Met Phe Pro Glu Arg Ala Leu Gln Asp Arg		160
165	170	175
Leu Leu Ser Gln Leu Glu Ala Asn Pro Asn Leu Cys Ser Leu Cys Ser		
180	185	190
Val Pro Leu Phe Cys Trp Ile Ile		
195	200	

&lt;210&gt; 12

&lt;211&gt; 8

&lt;212&gt; PRT

&lt;213&gt; Homo sapiens

&lt;400&gt; 12

Gly Asp Ala Gly Val Gly Lys Ser	
1	5

&lt;210&gt; 13

&lt;211&gt; 5

&lt;212&gt; PRT

&lt;213&gt; Homo sapiens

&lt;400&gt; 13

Leu Phe Thr Phe Asp	
1	5

&lt;210&gt; 14

&lt;211&gt; 12

&lt;212&gt; PRT

&lt;213&gt; Homo sapiens

&lt;400&gt; 14

Ser Lys Leu Leu Thr Ala Arg Thr Gly Ile Glu Val	
1	5
	10

&lt;210&gt; 15

&lt;211&gt; 28

&lt;212&gt; PRT

&lt;213&gt; Homo sapiens

&lt;400&gt; 15

Gly Ile Cys Ala Asn Tyr Leu Lys Leu Thr Tyr Cys Asn Ala Cys Ser	
1	5
	10
	15

Ala Asp Cys Ser Ala Leu Ser Phe Val Leu His His	
20	25

&lt;210&gt; 16

&lt;211&gt; 26

&lt;212&gt; PRT

<213> Homo sapiens

<400> 16  
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Tyr Gly Val Arg Glu Leu Gln Pro Cys Phe  
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<210> 17

<211> 27

<212> PRT

<213> Homo sapiens

<400> 17

Ser Arg Leu Thr Val Leu Arg Leu Ser Val Asn Gln Ile Thr Asp Gly  
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Gly Val Lys Val Leu Ser Glu Glu Leu Thr Lys  
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<210> 18

<211> 28

<212> PRT

<213> Homo sapiens

<400> 18

Tyr Lys Ile Val Thr Tyr Leu Gly Leu Tyr Asn Asn Gln Ile Thr Asp  
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Val Gly Ala Arg Tyr Val Thr Lys Ile Leu Asp Glu  
20 25

<210> 19

<211> 28

<212> PRT

<213> Homo sapiens

<400> 19

Cys Lys Gly Leu Thr His Leu Lys Leu Gly Lys Asn Lys Ile Thr Ser  
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Glu Gly Gly Lys Tyr Leu Ala Leu Ala Val Lys Asn  
20 25

<210> 20

<211> 28

<212> PRT

<213> Homo sapiens

<400> 20

Ser Lys Ser Ile Ser Glu Val Gly Met Trp Gly Asn Gln Val Gly Asp  
1 5 10 15  
Glu Gly Ala Lys Ala Phe Ala Glu Ala Leu Arg Asn  
20 25

<210> 21

<211> 28

<212> PRT

<213> Homo sapiens

<400> 21  
 His Pro Ser Leu Thr Thr Leu Ser Leu Ala Ser Asn Gly Ile Ser Thr  
 1 5 10 15  
 Glu Gly Gly Lys Ser Leu Ala Arg Ala Leu Gln Gln  
 20 25

<210> 22  
<211> 28  
<212> PRT  
<213> Homo sapiens

<400> 22  
Asn Thr Ser Leu Glu Ile Leu Trp Leu Thr Gln Asn Glu Leu Asn Asp  
 1 5 10 15  
 Glu Val Ala Glu Ser Leu Ala Glu Met Leu Lys Val  
 20 25

<210> 23  
<211> 28  
<212> PRT  
<213> Homo sapiens

<400> 23  
Asn Gln Thr Leu Lys His Leu Trp Leu Ile Gln Asn Gln Ile Thr Ala  
 1 5 10 15  
 Lys Gly Thr Ala Gln Leu Ala Asp Ala Leu Gln Ser  
 20 25

<210> 24  
<211> 28  
<212> PRT  
<213> Homo sapiens

<400> 24  
Asn Thr Gly Ile Thr Glu Ile Cys Leu Asn Gly Asn Leu Ile Lys Pro  
 1 5 10 15  
 Glu Glu Ala Lys Val Tyr Glu Asp Glu Lys Arg Ile  
 20 25

<210> 25  
<211> 3080  
<212> DNA  
<213> Homo sapiens

<220>  
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<222> (1)...(1470)

<400> 25  
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His Ala Ser Asp Leu Leu Lys Asn Asp Tyr Phe Ser Ala Glu Asp Ala  
 1 5 10 15

gag att gtg tgt gcc tgc ccc acc cag cct gac aag gtc cgc aaa att 96  
Glu Ile Val Cys Ala Cys Pro Thr Gln Pro Asp Lys Val Arg Lys Ile  
 20 25 30

ctg gac ctg gta cag agc aag ggc gag gag gtg tcc gag ttc ttc ctc Leu Asp Leu Val Gln Ser Lys Gly Glu Glu Val Ser Glu Phe Phe Leu	35	40	45	144
tac ttg ctc cag caa ctc gca gat gcc tac gtg gac ctc agg cct tgg Tyr Leu Leu Gln Gln Leu Ala Asp Ala Tyr Val Asp Leu Arg Pro Trp	50	55	60	192
ctg ctg gag atc ggc ttc tcc cct tcc ctg ctc act cag agc aaa gtc Leu Leu Glu Ile Gly Phe Ser Pro Ser Leu Leu Thr Gln Ser Lys Val	65	70	75	240
gtg gtc aac act gac cca gtg agc agg tat acc cag cag ctg cga cac Val Val Asn Thr Asp Pro Val Ser Arg Tyr Thr Gln Gln Leu Arg His	85	90	95	288
cat ctg ggc cgt gac tcc aag ttc gtg ctg tgc tat gcc cag aag gag His Leu Gly Arg Asp Ser Lys Phe Val Leu Cys Tyr Ala Gln Lys Glu	100	105	110	336
gag ctg ctg ctg gag gag atc tac atg gac acc atc atg gag ctg gtt Glu Leu Leu Glu Glu Ile Tyr Met Asp Thr Ile Met Glu Leu Val	115	120	125	384
ggc ttc agc aat gag agc ctg ggc agc ctg aac agc ctg gcc tgc ctc Gly Phe Ser Asn Glu Ser Leu Gly Ser Leu Asn Ser Leu Ala Cys Leu	130	135	140	432
ctg gac cac acc acc ggc atc ctc aat gag cag ggt gag acc atc ttc Leu Asp His Thr Thr Gly Ile Leu Asn Glu Gln Gly Glu Thr Ile Phe	145	150	155	480
atc ctg ggt gat gct ggg gtg ggc aag tcc atg ctg cta cag cggt ctg Ile Leu Gly Asp Ala Gly Val Gly Lys Ser Met Leu Leu Gln Arg Leu	165	170	175	528
cag agc ctc tgg gcc acg ggc cgg cta gac gca ggg gtc aaa ttc ttc Gln Ser Leu Trp Ala Thr Gly Arg Leu Asp Ala Gly Val Lys Phe Phe	180	185	190	576
ttc cac ttt cgc tgc cgc atg ttc agc tgc ttc aag gaa agt gac agg Phe His Phe Arg Cys Arg Met Phe Ser Cys Phe Lys Glu Ser Asp Arg	195	200	205	624
ctg tgt ctg cag gac ctg ctc ttc aag cac tac tgc tac cca gag cggt Leu Cys Leu Gln Asp Leu Leu Phe Lys His Tyr Cys Tyr Pro Glu Arg	210	215	220	672
gac ccc gag gag gtg ttt gcc ttc ctg ctg cgc ttc ccc cac gtg gcc Asp Pro Glu Glu Val Phe Ala Phe Leu Leu Arg Phe Pro His Val Ala	225	230	235	720
ctc ttc acc ttc gat ggc ctg gac gag ctg cac tcg gac ttg gac ctg Leu Phe Thr Phe Asp Gly Leu Asp Glu Leu His Ser Asp Leu Asp Leu	245	250	255	768
agc cgc gtg cct gac agc tcc tgc ccc tgg gag cct gcc cac ccc ctg				816

Ser Arg Val Pro Asp Ser Ser Cys Pro Trp Glu Pro Ala His Pro Leu			
260	265	270	
gtc ttg ctg gcc aac ctg ctc agt ggg aag ctg ctc aag ggg gct agc			864
Val Leu Leu Ala Asn Leu Leu Ser Gly Lys Leu Leu Lys Gly Ala Ser			
275	280	285	
aag ctg ctc aca gcc cgc aca ggc atc gag gtc ccg cgc cag ttc ctg			912
Lys Leu Leu Thr Ala Arg Thr Gly Ile Glu Val Pro Arg Gln Phe Leu			
290	295	300	
cg <sup>g</sup> aag aag gtg ctt ctc cg <sup>g</sup> ggc ttc tcc ccc agc cac ctg cgc gcc			960
Arg Lys Lys Val Leu Leu Arg Gly Phe Ser Pro Ser His Leu Arg Ala			
305	310	315	320
tat gcc agg agg atg ttc ccc gag cg <sup>g</sup> gcc ctg cag gac cgc ctg ctg			1008
Tyr Ala Arg Arg Met Phe Pro Glu Arg Ala Leu Gln Asp Arg Leu Leu			
325	330	335	
agc cag ctg gag gcc aac ccc aac ctc tgc agc ctg tgc tct gtg ccc			1056
Ser Gln Leu Glu Ala Asn Pro Asn Leu Cys Ser Leu Cys Ser Val Pro			
340	345	350	
ctc ttc tgc tgg atc atc ttc cg <sup>g</sup> tgc ttc cag cac ttc cgt gct gcc			1104
Leu Phe Cys Trp Ile Ile Phe Arg Cys Phe Gln His Phe Arg Ala Ala			
355	360	365	
ttt gaa ggc tca cca cag ctg ccc gac tgc acg atg acc ctg aca gat			1152
Phe Glu Gly Ser Pro Gln Leu Pro Asp Cys Thr Met Thr Leu Thr Asp			
370	375	380	
gtc ttc ctc ctg gtc act gag gtc cat ctg aac agg atg cag ccc agc			1200
Val Phe Leu Leu Val Thr Glu Val His Leu Asn Arg Met Gln Pro Ser			
385	390	395	400
agc ctg gtg cag cg <sup>g</sup> aac aca cgc agc cca gtg gag acc ctc cac gcc			1248
Ser Leu Val Gln Arg Asn Thr Arg Ser Pro Val Glu Thr Leu His Ala			
405	410	415	
ggc cg <sup>g</sup> gac act ctg tgc tcg ctg ggg cag gtg gcc cac cg <sup>g</sup> ggc atg			1296
Gly Arg Asp Thr Leu Cys Ser Leu Gly Gln Val Ala His Arg Gly Met			
420	425	430	
gag aag agc ctc ttt gtc ttc acc cag gag gag gtg cag gcc tcc ggg			1344
Glu Lys Ser Leu Phe Val Phe Thr Gln Glu Glu Val Gln Ala Ser Gly			
435	440	445	
ctg cag gag aga gac atg cag ctg ggc ttc ctg cg <sup>g</sup> gct ttg ccg gag			1392
Leu Gln Glu Arg Asp Met Gln Leu Gly Phe Leu Arg Ala Leu Pro Glu			
450	455	460	
ctg ggc ccc ggg ggt gac cag cag tcc tat gag ttt ttc cac ctc agc			1440
Leu Gly Pro Gly Gly Asp Gln Gln Ser Tyr Glu Phe Phe His Leu Ser			
465	470	475	480
ctc ctc acc tgt aaa act ggg atc cca gta tagactttgg aaatcagtag			1490
Leu Leu Thr Cys Lys Thr Gly Ile Pro Val			

485

490

acaccatatg	cttcaaaaaaa	caggggctat	taaaatgaca	tcaggagcca	gaaagtctca	1550
tggctgtgct	ttctcttcaa	gtttatacaa	caaccagatc	accgatgtcg	gagccagact	1610
gggaaaaaac	aaaataacaa	gtgaaggagg	gaagtatctc	gccctggctg	tgaagaacag	1670
caaataatc	tctgaggttg	ggatgtgggg	caatcaagtt	ggggatgaag	gagcaaaagc	1730
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catctccaca	gaaggagggaa	agagcattgc	gagggccctg	cagcagaaca	cgtctctaga	1850
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gttgaagtc	aaccagacgt	taaagcattt	atggcttatac	cagaatcaga	tcacagtctt	1970
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caattctgca	gaaaaagaat	gtgtcttgcg	agctgttta	gttacagtaa	atacactgtg	2150
aagagacttt	attgcctatt	ataattattt	ttatctgaag	ctagaggaat	aaagctgtga	2210
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cagcactttc	ccatgtattt	atactggcc	cacttcacag	ctggagacac	cgagatgtgt	2450
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accacgggct	tttaatttta	atcctggagt	ctcactgtct	gctggcaaag	atagagaatg	2570
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gcttctcctc	tgctaggcta	ccctcctcta	gaaggctgag	taccatgggc	tacagtgtct	2690
ggccttggga	agaagtgatt	ctgtccctcc	aaagaaaatag	ggcatggctt	gccccctgtgg	2750
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ccatgagggt	gggggtgata	ctactagatc	acttgcctc	ttgccagctc	atttgttaat	2990
aaaatactga	aaacacaaaaaa	aaaaaaaaaa	aaaaaaaaaa	aaaaaaaaaa	aaaaaaaaaa	3050
aaaaaaaaaa	aaaaaaaaaa	aaaaaaaaaa	aaaaaaaaaa	aaaaaaaaaa	aaaaaaaaaa	3080

&lt;210&gt; 26

&lt;211&gt; 490

&lt;212&gt; PRT

&lt;213&gt; Homo sapiens

&lt;400&gt; 26

His	Ala	Ser	Asp	Leu	Leu	Lys	Asn	Asp	Tyr	Phe	Ser	Ala	Glu	Asp	Ala
1				5					10				15		
Glu	Ile	Val	Cys	Ala	Cys	Pro	Thr	Gln	Pro	Asp	Lys	Val	Arg	Lys	Ile
						20			25			30			
Leu	Asp	Leu	Val	Gln	Ser	Lys	Gly	Glu	Glu	Val	Ser	Glu	Phe	Phe	Leu
						35			40			45			
Tyr	Leu	Leu	Gln	Gln	Leu	Ala	Asp	Ala	Tyr	Val	Asp	Leu	Arg	Pro	Trp
						50			55			60			
Leu	Leu	Glu	Ile	Gly	Phe	Ser	Pro	Ser	Leu	Leu	Thr	Gln	Ser	Lys	Val
						65			70			75			80
Val	Val	Asn	Thr	Asp	Pro	Val	Ser	Arg	Tyr	Thr	Gln	Gln	Leu	Arg	His
									85			90			95
His	Leu	Gly	Arg	Asp	Ser	Lys	Phe	Val	Leu	Cys	Tyr	Ala	Gln	Lys	Glu
									100			105			110
Glu	Leu	Leu	Leu	Glu	Glu	Ile	Tyr	Met	Asp	Thr	Ile	Met	Glu	Leu	Val
									115			120			125
Gly	Phe	Ser	Asn	Glu	Ser	Leu	Gly	Ser	Leu	Asn	Ser	Leu	Ala	Cys	Leu
									130			135			140
Leu	Asp	His	Thr	Thr	Gly	Ile	Leu	Asn	Glu	Gln	Gly	Glu	Thr	Ile	Phe
									145			150			155
Ile	Leu	Gly	Asp	Ala	Gly	Val	Gly	Lys	Ser	Met	Leu	Leu	Gln	Arg	Leu

165	170	175
Gln Ser Leu Trp Ala Thr Gly Arg	Leu Asp Ala Gly Val	Lys Phe Phe
180	185	190
Phe His Phe Arg Cys Arg Met	Phe Ser Cys Phe Lys	Glu Ser Asp Arg
195	200	205
Leu Cys Leu Gln Asp Leu Leu	Phe Lys His Tyr Cys	Tyr Pro Glu Arg
210	215	220
Asp Pro Glu Glu Val Phe Ala Phe	Leu Leu Arg Phe Pro His	Val Ala
225	230	240
Leu Phe Thr Phe Asp Gly Leu Asp	Glu Leu His Ser Asp	Leu Asp Leu
245	250	255
Ser Arg Val Pro Asp Ser Ser Cys	Pro Trp Glu Pro Ala	His Pro Leu
260	265	270
Val Leu Leu Ala Asn Leu Leu	Ser Gly Lys Leu Leu	Lys Gly Ala Ser
275	280	285
Lys Leu Leu Thr Ala Arg Thr	Gly Ile Glu Val Pro	Arg Gln Phe Leu
290	295	300
Arg Lys Lys Val Leu Leu Arg	Gly Phe Ser Pro	Ser His Leu Arg Ala
305	310	320
Tyr Ala Arg Arg Met	Phe Pro Glu Arg Ala	Leu Gln Asp Arg Leu
325	330	335
Ser Gln Leu Glu Ala Asn Pro	Asn Leu Cys Ser	Leu Cys Ser Val Pro
340	345	350
Leu Phe Cys Trp Ile Ile Phe	Arg Cys Phe Gln His	Phe Arg Ala Ala
355	360	365
Phe Glu Gly Ser Pro Gln Leu	Pro Asp Cys Thr	Met Thr Leu Thr Asp
370	375	380
Val Phe Leu Leu Val Thr	Glu Val His Leu Asn	Arg Met Gln Pro Ser
385	390	400
Ser Leu Val Gln Arg Asn Thr	Arg Ser Pro Val	Glu Thr Leu His Ala
405	410	415
Gly Arg Asp Thr Leu Cys Ser	Leu Gly Gln Val	Ala His Arg Gly Met
420	425	430
Glu Lys Ser Leu Phe Val	Phe Thr Gln Glu	Val Gln Ala Ser Gly
435	440	445
Leu Gln Glu Arg Asp Met	Gln Leu Gly Phe	Leu Arg Ala Leu Pro Glu
450	455	460
Leu Gly Pro Gly Gly Asp	Gln Gln Ser Tyr	Glu Phe Phe His Leu Ser
465	470	480
Leu Leu Thr Cys Lys Thr	Gly Ile Pro Val	
485	490	

&lt;210&gt; 27

&lt;211&gt; 1470

&lt;212&gt; DNA

&lt;213&gt; Homo sapiens

&lt;400&gt; 27

cacgcgtccg acttgctgaa	gaatgactac ttctcgcccc	aagatgcgga gattgtgtgt	60
gcctgccccca cccagcctga	caaggccgc aaaattctgg	acctggtaca gagcaagggc	120
gaggaggtgt ccgagttctt	cctctacttg ctccagcaac	tgcagatgc ctacgtggac	180
ctcaggcctt ggctgctgga	gatcggcttc tccccttccc	tgctcactca gagcaaagtc	240
gtggtcaaca ctgaccagt	gagcaggtat acccagcagc	tgcgacacca tctggccgt	300
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ctggcctgccc tcctggacca	caccaccggc atcctaattg	agcagggtga gaccatcttc	480
atcctgggtg atgctgggtt	ggcaagtcc atgctgctac	agcggctgca gagcctctgg	540

gccacgggcc	ggcttagacgc	aggggtcaaa	ttcttcttcc	actttcgctg	ccgcatgttc	600
agctgcttca	agaaaagtga	caggctgtgt	ctgcaggacc	tgctcttcaa	gcactactgc	660
tacccagagc	gggaccggca	ggaggtgttt	gccttcctgc	tgcgcttccc	ccacgtggcc	720
ctcttcacct	tcgatggcct	ggacgagctg	cactcgact	tggacctgag	ccgcgtgcct	780
gacagctcct	gccctggga	gcctgcccac	cccctggct	tgctggccaa	cctgctcagt	840
ggaaagctgc	tcaagggggc	tagcaagctg	ctcacagccc	gcacaggcat	cgaggtcccg	900
cgccagttcc	tgcggaagaa	ggtgcttctc	cggggcttct	cccccagcca	cctgcgcgccc	960
tatgccagga	ggatgttccc	cgagcgggcc	ctgcaggacc	gcctgctgag	ccagctggag	1020
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tgcttcagc	acttccgtgc	tgcccttcaa	ggctcaccac	agctgcccga	ctgcacgatg	1140
accctgacag	atgtcttcct	cctggtcact	gaggtccatc	tgaacaggat	gcagcccagc	1200
agcctgggtgc	agcggAACAC	acgcagccca	gtggagaccc	tccacGCCG	ccgggacact	1260
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gcttgccgg	agctggccc	cgggggtgac	cagcagtct	atgagtttt	ccacctcagc	1440
ctcctcacct	gtaaaactgg	gatcccagta				1470

&lt;210&gt; 28

&lt;211&gt; 74

&lt;212&gt; PRT

&lt;213&gt; Homo sapiens

&lt;400&gt; 28

His Ala Ser Asp Leu Leu Lys Asn Asp Tyr Phe Ser Ala Glu Asp Ala

1 5 10 15

Glu Ile Val Cys Ala Cys Pro Thr Gln Pro Asp Lys Val Arg Lys Ile

20 25 30

Leu Asp Leu Val Gln Ser Lys Gly Glu Glu Val Ser Glu Phe Phe Leu

35 40 45

Tyr Leu Leu Gln Gln Leu Ala Asp Ala Tyr Val Asp Leu Arg Pro Trp

50 55 60

Leu Leu Glu Ile Gly Phe Ser Pro Ser Leu

65 70

&lt;210&gt; 29

&lt;211&gt; 8

&lt;212&gt; PRT

&lt;213&gt; Homo sapiens

&lt;400&gt; 29

Gly Asp Ala Gly Val Gly Lys Ser

1 5

&lt;210&gt; 30

&lt;211&gt; 5

&lt;212&gt; PRT

&lt;213&gt; Homo sapiens

&lt;400&gt; 30

Leu Phe Thr Phe Asp

1 5

&lt;210&gt; 31

&lt;211&gt; 94

&lt;212&gt; PRT

&lt;213&gt; Homo sapiens

&lt;400&gt; 31

Ala Gln Glu Arg Pro Ser Glu Thr Thr Asp Arg Glu Arg Lys Arg Leu  
 1 5 10 15  
 Val Glu Thr Leu Gln Ala Asp Ser Gly Leu Leu Leu Asp Ala Leu Leu  
 20 25 30  
 Ala Arg Gly Val Leu Thr Gly Pro Glu Tyr Glu Ala Leu Asp Ala Leu  
 35 40 45  
 Pro Asp Ala Glu Arg Arg Val Arg Arg Leu Leu Leu Val Gln Gly  
 50 55 60  
 Lys Gly Glu Ala Ala Cys Gln Glu Leu Leu Arg Cys Ala Gln Arg Thr  
 65 70 75 80  
 Ala Gly Ala Pro Asp Pro Ala Trp Asp Trp Gln His Val Gly  
 85 90

&lt;210&gt; 32

&lt;211&gt; 89

&lt;212&gt; PRT

&lt;213&gt; Homo sapiens

&lt;400&gt; 32

Met Ala Ser Asp Asp Leu Ser Leu Ile Arg Lys Asn Arg Met Ala Leu  
 1 5 10 15  
 Phe Gln Gln Leu Thr Cys Val Leu Pro Ile Leu Asp Asn Leu Leu Lys  
 20 25 30  
 Ala Asn Val Thr Asn Lys Gln Glu His Asp Ile Ile Lys Gln Lys Thr  
 35 40 45  
 Gln Ile Pro Leu Gln Ala Arg Glu Leu Ile Asp Thr Ile Trp Val Lys  
 50 55 60  
 Gly Asn Ala Ala Ala Asn Ile Phe Lys Asn Cys Leu Lys Glu Ile Asp  
 65 70 75 80  
 Ser Thr Leu Tyr Lys Asn Leu Phe Val  
 85

&lt;210&gt; 33

&lt;211&gt; 89

&lt;212&gt; PRT

&lt;213&gt; Homo sapiens

&lt;400&gt; 33

Lys Glu Ser Asn Asp Leu Leu Leu Ile Arg Lys Asn Arg Met Ala Leu  
 1 5 10 15  
 Phe Gln His Leu Thr Cys Val Ile Pro Ile Leu Asp Ser Leu Leu Thr  
 20 25 30  
 Ala Gly Ile Ile Asn Glu Gln Glu His Asp Val Ile Lys Gln Lys Thr  
 35 40 45  
 Gln Thr Ser Leu Gln Ala Arg Glu Leu Ile Asp Thr Ile Leu Val Lys  
 50 55 60  
 Gly Asn Ile Ala Ala Thr Val Phe Arg Asn Ser Leu Gln Glu Ala Glu  
 65 70 75 80  
 Ala Val Leu Tyr Glu His Leu Phe Val  
 85

&lt;210&gt; 34

&lt;211&gt; 24

&lt;212&gt; DNA

&lt;213&gt; Homo sapiens

<400> 34  
ccctggtaact tgccccctccg gtag 24

<210> 35  
<211> 18  
<212> DNA  
<213> Homo sapiens

<400> 35  
cctggtaactt gccccctcc 18

<210> 36  
<211> 23  
<212> DNA  
<213> Homo sapiens

<400> 36  
tcgttaagcc cttgaagaca gtg 23

<210> 37  
<211> 30  
<212> DNA  
<213> Homo sapiens

<400> 37  
tcgttagccc ttgaagacca gtgagtgttag 30